CIVIL AIM CONSULTANTS & ENGINEERS

(Building Geo-Tech & Highway Materials Testing Laboratory)

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QC ABSTRACT

Nameof Work:: Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

Sl. No.	Item	Quantity As Per BOQ	Required No's of testes as per frequency	Actual No's of testes as per frequency	Testes Results
1	Materials	147.08 Cum	1	1	Pass
2	Steel	4.64 Tonne	1	1	Pass
3	M20	69.29 Cum	5	5	Pass
4	Precast Slab-100mm	299.16 Sqm	1	1	Pass
5	Precast Slab-230mm	37.2 Sqm	1	1	Pass
6	M30	112.65Cum	6	6	Pass
7	WMM	379.36 Cum	-	-	-
		Atterberg Limit	4	4	Pass
		AIV	2	2	Pass
		Shape Test	2	2	Pass
		Gradation	4	4	Pass
8	DBM	82.47Cum	-	-	-
		Quality of Binder	1	1	Pass
		AIV	1	1	Pass
		Shape Test	1	1	Pass
		Gradation	1	1	Pass
		Specific Gravity	1	1	Pass
		Stability of Mix	2	2	Pass
		Bitumen content	2	2	Pass
9	BC	65.98 Cum	-	-	-
		Quality of Binder	1	1	Pass
		AIV	1	1	Pass
		Shape Test	1	1	Pass
		Gradation	1	1	Pass
		Specific Gravity	1	1	Pass
		Stability of Mix	2	2	Pass
		Bitumen content	2	2	Pass

Cubes	0-5 Cum	1Set
	6-15 Cum	2Set
	16-30 Cum	3Set
	31-50 Cum	4Set
	Add 1set for extra 50Cum	

For CIVIL AIM CONSULTANTS & ENGINEERS

Authorised Signatory

No. 01, Satvika Nilaya, Opp. Widia Poorna Prajna School,
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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date: 01.04.2023

TEST REPORT

CLIENT	:	**Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**
AGENCY	:	**Sri. Vasanth R,** Contractor, Bangalore.
NAME OF THE WORK	:	Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.
SAMPLE ID	:	Cement (Dalmia OPC 53 Grade)
DATE OF MANUFACTURE	:	March – 2023
DATE OF TESTING	:	30.03.2023 to 01.04.2023
SAMPLES SUPPLIED BY	:	AGENCY

The results of the tests conducted on the cement sample are as follows:

Sl.No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 269-2015
1	a) Initial Setting Time	IS-4031 (Part -5)	130 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5)	340 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part 3) by the Le-Chatelier method	1 mm	Not more than 10 mm
3	Standard Consistency	IS-4031 (Part -4)	30.00 %	-

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Job No.: CACE/BBMP/VR/W.No.06/2023-24

Date : 01.04.2023

TEST REPORT ON FINE AGGREGATES (SAND)

Client : **Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**

Agency : **Sri. Vasanth R, Contractor, Bangalore.**

Name of Work : Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

Date of Testing : 01.04.2023

IS Code : IS 383:2016

: IS 2386 (Part 1):1963(RA 2011)

Material : Sand

Total Wt. of Aggregates in gms **1000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits For Zone-II
10	0	0	0	100	100
4.75	80	8.00	8.00	92.0	90-100
2.36	125	12.50	20.50	79.5	75-100
1.18	179	17.90	38.40	61.6	55-90
600 Micron	151	15.10	53.50	46.5	35-59
300 Micron	221	22.10	75.60	24.4	8-30
150 Micron	156	15.60	91.20	8.8	0-10

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date : 01.04.2023

TEST REPORT ON FINE AGGREGATES (SAND)
IS 2116-1980

Client : **Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**

Agency : **Sri. Vasanth R, Contractor, Bangalore.**

Name of Work : Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

Date of Testing : 01.04.2023

Material : Sand - Masonry Total wt. of aggregates in gms = **1000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits as per IS 2116-1980
4.75	0	0.00	0.00	100.0	100
2.36	15	1.50	1.50	98.5	90-100
1.18	37	3.70	5.20	94.8	70-100
600 Micron	90	9.00	14.20	85.8	40-100
300 Micron	243	24.30	38.50	61.5	5-70
150 Micron	482	48.20	86.70	13.3	0-15

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date : 01.04.2023

TEST REPORT ON COARSE AGGREGATES

Client : **Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**
Agency : **Sri. Vasanth R, Contractor, Bangalore.**
Name of Work : Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

Date of Testing : 01.04.2023
IS Code : IS 383:2016
: IS 2386 (Part 1):1963(RA 2011)
Material : 20mm Aggregates

Total Wt. of Aggregates in gms= **5000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits
40	0	0	0	100	100
20	192	3.8	3.8	96.2	95-100
10	2548	51.0	54.8	45.2	25-55
4.75	1992	39.8	94.6	5.4	0-10

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date : 01.04.2023

TEST REPORT ON COARSE AGGREGATES

Client : **Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**
Agency : **Sri. Vasanth R, Contractor, Bangalore.**
Name of Work : Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

Date of Testing : 01.04.2023
IS Code : IS 383:2016
: IS 2386 (Part 1):1963(RA 2011)
Material : 40mm Aggregates

Total Wt. of Aggregates in gms **15000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits
80	0	0	0	100	100
40	180	1.20	1.20	98.80	95-100
20	8232	54.88	56.08	43.92	30-70
10	3249	21.66	77.74	22.26	10-35
4.75	2801	18.67	96.41	3.59	0-5

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Job No.: CACE/BBMP/VR/W.No.06/2023-24

Date : 01.04.2023

TEST REPORT OF PHYSICAL PROPERTIES OF REINFORCEMENT STEEL

Client : **Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**

Agency : **Sri. Vasanth R, Contractor, Bangalore.**

Name of Work : Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

Steel Dia/Length : 8mm,10mm " Fe500 TMT Bars"

Reference to BIS codes : IS 1786:2008(RA 2013) High Strength Deformed Steel Bars and Wires for Concrete Reinforcement-Specification

: IS 1608:2005 Metallic Materials- Tensile Testing at Ambient Temperature

Date of test : 01.04.2023

S.No	Brand	Nominal size (dia in mm)	Mass per meter (kg/meter)	TENSILE STRENGTH			
				0.20 % proof stress/ yield stress (N/mm^2)	Tensile strength (N/mm^2)	TS/YS ratio	Elongation, percent on gauge length
1	TMT	8	0.399	545	630	1.16	14
2	TMT	10	0.619	551	637	1.16	14.5

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Job No.: CACE/BBMP/VR/W.No.06/2023-24

Date: 24.04.2023

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**

Agency : **Sri. Vasanth R, Contractor, Bangalore.**

Name of the work : Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{30}

Compressive Strength as on : 7th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	17.04.2023	24.04.2023	8.168	482.6	21.45
2	17.04.2023	24.04.2023	8.159	504.2	22.41
3	17.04.2023	24.04.2023	8.146	519.3	23.08

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date: 15.05.2023

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**

Agency : **Sri. Vasanth R, Contractor, Bangalore.**

Name of the work : Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{30}

Compressive Strength as on : 28th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	17.04.2023	15.05.2023	8.184	714.6	31.76
2	17.04.2023	15.05.2023	8.156	708.2	31.48
3	17.04.2023	15.05.2023	8.138	700.9	31.15

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date: 24.04.2023

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**

Agency : **Sri. Vasanth R, Contractor, Bangalore.**

Name of the work : Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{30}

Compressive Strength as on : 7th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	17.04.2023	24.04.2023	8.169	500.2	22.23
2	17.04.2023	24.04.2023	8.152	513.2	22.81
3	17.04.2023	24.04.2023	8.184	484.9	21.55

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Client	: **Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**
Agency	: **Sri. Vasanth R, Contractor, Bangalore.**
Name of the work	: Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.
Sample ID	: Cement Concrete
Size of cubes	: 150mmx150mmx150mm
Cross Sectional Area	: 22500 mm^2
Technical Reference	: IS: 516-1959 (Reaffirmed 2008)
Grade of Concrete	: M_{30}
Compressive Strength as on	: 28th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	17.04.2023	15.05.2023	8.165	712.2	31.65
2	17.04.2023	15.05.2023	8.146	728.9	32.40
3	17.04.2023	15.05.2023	8.128	706.3	31.39

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Client : **Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**

Agency : **Sri. Vasanth R, Contractor, Bangalore.**

Name of the work : Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{30}

Compressive Strength as on : 7th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	17.04.2023	24.04.2023	8.162	488.6	21.72
2	17.04.2023	24.04.2023	8.144	496.2	22.05
3	17.04.2023	24.04.2023	8.156	505.2	22.45

Note:

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For CIVIL AIM CONSULTANTS & ENGINEERS

Authorised Signatory

No. 01, Satvika Nilaya, Opp. Widia Poorna Prajna School,
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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date: 15.05.2023

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**

Agency : **Sri. Vasanth R, Contractor, Bangalore.**

Name of the work : Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{30}

Compressive Strength as on : 28th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	17.04.2023	15.05.2023	8.184	705.2	31.34
2	17.04.2023	15.05.2023	8.169	716.3	31.84
3	17.04.2023	15.05.2023	8.152	724.2	32.19

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Job No.: CACE/BBMP/VR/W.No.06/2023-24

Date: 15.05.2023

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**

Agency : **Sri. Vasanth R, Contractor, Bangalore.**

Name of the work : Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{30}

Compressive Strength as on : 28th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	17.04.2023	15.05.2023	8.184	705.2	31.34
2	17.04.2023	15.05.2023	8.169	716.3	31.84
3	17.04.2023	15.05.2023	8.152	724.2	32.19

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date: 26.04.2023

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**

Agency : **Sri. Vasanth R, Contractor, Bangalore.**

Name of the work : Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{30}

Compressive Strength as on : 7th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	19.04.2023	26.04.2023	8.169	500.3	22.24
2	19.04.2023	26.04.2023	8.184	489.6	21.76
3	19.04.2023	26.04.2023	8.156	476.2	21.16

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date: 08.05.2023

TEST REPORT

Client	:	**Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**
Agency	:	**Sri. Vasanth R,** Contractor, Bangalore.
Name of the work	:	Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.
IS Code	:	IS 73:2013, IS 1203:1978(RA 2008), IS 1205:1978(RA 2009), IS 1208:1978(RA 2009), IS 1209:1978(RA 2009)
Source of location	:	Hot mix Plant, Bangalore, VG 30
Date of testing	:	08.05.2023

The results of the tests conducted on the bitumen sample using for Bituminous Concrete

Sl. No	Description	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 ^{0}C, 1/10 mm	55	Min 45
2	Softening point, ^{0}C	53	Min. 47
3	Ductility at 27^{0}C, cm	> 112	Min. 40
4	Flash Point, ^{0}C	260	Min. 220

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date : 08.05.2023

Aggregate Gradation Test

IS : 2386 Part I

Client	**: Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**
Agency	**: Sri. Vasanth R, Contractor, Bangalore.**
Name of the Work	: Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.
BIS Code	IS 2386(Part 1):1963
Sample I / D	Hot Mix Plant, Bangalore
Type of Mix	Bituminous Concrete
Date of Testing	08.05.2023

Total Weight of Sample: **5000** gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Requirement as per MORTH table 500.17	Remarks
19	0	0	0	100	100	Gradation satisfies Bituminous concrete Grade-II specification as per MORTH
13.2	430	8.60	8.60	91.40	90 - 100	
9.5	475	9.50	18.10	81.90	70 - 88	
4.75	630	12.60	30.70	69.30	53 - 71	
2.36	672	13.44	44.14	55.86	42 - 58	
1.18	515	10.30	54.44	45.56	34 - 48	
0.600	549	10.98	65.42	34.58	26 - 38	
0.300	480	9.60	75.02	24.98	18 - 28	
0.150	352	7.04	82.06	17.94	12 - 20	
0.075	470	9.40	91.46	8.54	4 - 10	

Total Weight of Sample: **5000** gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Requirement as per MORTH table 500.17	Remarks
19	0	0	0	100	100	Gradation satisfies Bituminous concrete Grade-II specification as per MORTH
13.2	480	9.60	9.60	90.40	90 - 100	
9.5	552	11.04	20.64	79.36	70 - 88	
4.75	672	13.44	34.08	65.92	53 - 71	
2.36	529	10.58	44.66	55.34	42 - 58	
1.18	542	10.84	55.50	44.50	34 - 48	
0.600	545	10.90	66.40	33.60	26 - 38	
0.300	679	13.58	79.98	20.02	18 - 28	
0.150	195	3.90	83.88	16.12	12 - 20	
0.075	473	9.46	93.34	6.66	4 - 10	

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date : 08.05.2023

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**: Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**
Agency	**: Sri. Vasanth R, Contractor, Bangalore.**
Name of Work	: Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Bituminous Concrete
Date of Testing	08.05.2023

Sl no	Test	1	2	Requirements as per MORTH 5th edition table no 500.16
1	Flakiness Index	12.5	13.1	Combined Flakiness & Elongation index Max 35%
2	Elongation Index	13.3	13.7	
	Combined Flakiness & Elongation index	25.80	26.80	

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Job No.: CACE/BBMP/VR/W.No.06/2023-24

Date : 09.05.2023

Specific Gravity And Water Absorption Test

Client	: Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
Agency	: Sri. Vasanth R, Contractor, Bangalore.
Name of the Work	: Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.
BIS Code	IS 2386(Part 3):1963
Type of Mix	Bituminous Concrete
Date of Testing	07.05.2023 to 09.05.2023

Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 3	
1	Weight of aggregate suspended in water with the basket	W_1 g	2023	2022	2021	
2	Weight of basket suspended in water	W_2 g	756	754	755	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_s$ g	1267	1268	1266	
4	Weight of saturated surface dry aggregate in air	W_3 g	2022	2021	2020	
5	Weight of water equal to the volume of the aggregate	$(W_3 - W_S)$ g	755	753	754	
6	Weight of oven dried aggregate	W_4 g	2014	2013	2012	
7	Specific Gravity	$W_4/(W_3-W_S)$	2.668	2.673	2.668	2.670
8	Apparent Specific gravity	$W_4/(W_4-W_S)$	2.696	2.702	2.697	2.698
9	Water Absorption	$((W_3-W_4)*100)/W_4$	0.40%	0.40%	0.40%	0.40%

Comments:

→ Maximum allowable Aggregate Water absorption value for Bituminous Concrete is 2.0%(MORTH table 500.16)

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date: 11.05.2023

TEST REPORT ON STABILITY OF MIX

Client	:	**Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**
Agency	:	**Sri. Vasanth R,** Contractor, Bangalore.
Name of the Work	:	Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.
Source of location	:	Hot mix Plant, Bangalore
Type of Mix	:	Bituminous Concrete
Date of Testing	:	11.05.2023

The results of the tests conducted on the Bituminous Concrete mix sample are as follows:

Sl. No	Description	Test Result 1	Test Result 2	Requirement as per MORTH (Table 500-19)
1	Marshal Stability, Kn	9.09	9.72	9 Kn (min)
2	Marshal flow, mm	2.22	3.01	2 – 4
3	Percent air voids in Mineral Aggregate	13.32	14.05	13 – 15
4	Voids in Compacted Mix	3.42	4.09	3 – 6
5	Percent Voids filled with Bitumen	68.05	70.45	65 - 75
6	Density, g/cc	2.21	2.22	--

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date: 12.05.2023

TEST REPORT ON STABILITY OF MIX

Client	:	**Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**
Agency	:	**Sri. Vasanth R,** Contractor, Bangalore.
Name of the Work	:	Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.
Source of location	:	Hot mix Plant, Bangalore
Type of Mix	:	Bituminous Concrete
Date of Testing	:	12.05.2023

The results of the tests conducted on the Bituminous Concrete mix sample are as follows:

Sl. No	Description	Test Result 1	Test Result 2	Requirement as per MORTH (Table 500-19)
1	Marshal Stability, Kn	10.23	9.51	9 Kn (min)
2	Marshal flow, mm	3.53	2.69	2 – 4
3	Percent air voids in Mineral Aggregate	14.42	13.21	13 – 15
4	Voids in Compacted Mix	4.15	3.58	3 – 6
5	Percent Voids filled with Bitumen	72.11	70.05	65 - 75
6	Density, g/cc	2.24	2.22	--

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ಬ.ಬ.ಆಂ.ಪ ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಭಿಯಂತರರ
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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date : 11.05.2023

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE

AASHTO T 164 & AASHTO T 30

CLIENT	: Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
AGENCY	: Sri. Vasanth R, Contractor, Bangalore.
NAME OF THE WORK	: Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.
SAMPLE ID	Hot Mix Plant, Bangalore
DATE OF TESTING	11.05.2023

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Sample 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	472	472.5
3. Weight of Asphalt and Mineral matter Extracted, g	28	27.5
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g	-	-
6. Weight of Bitumen Extracted, g. (corrected)	28	27.5
7. Bitumen content in %	5.60	5.50
8. Average	5.55	

GRADATION AFTER EXTRACTION

SIEVE SIZE mm	Test 1				Requirement as per MORTH table 500.17
	Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	15.8	15.8	3.3	96.7	90 - 100
9.5	65.2	81	17.2	82.8	70 - 88
4.75	91.4	172.4	36.5	63.5	53 - 71
2.36	43.9	216.3	45.8	54.2	42 - 58
1.18	36.3	252.6	53.5	46.5	34 - 48
0.600	50.5	303.1	64.2	35.8	26 - 38
0.300	45.9	349	73.9	26.1	18 - 28
0.150	34.5	383.5	81.3	18.8	12 - 20
0.075	48.3	431.8	91.5	8.5	4 - 10

SIEVE SIZE mm	Test 2				Requirement as per MORTH table 500.17
	Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	15.8	15.8	3.3	96.7	90 - 100
9.5	62.1	77.9	16.5	83.5	70 - 88
4.75	91.9	169.8	35.9	64.1	53 - 71
2.36	46	215.8	45.7	54.3	42 - 58
1.18	43.1	258.9	54.8	45.2	34 - 48
0.600	51.1	310	65.6	34.4	26 - 38
0.300	48.1	358.1	75.8	24.2	18 - 28
0.150	34.6	392.7	83.1	16.9	12 - 20
0.075	41.8	434.5	92.0	8.0	4 - 10

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date : 12.05.2023

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE

AASHTO T 164 & AASHTO T 30

CLIENT	: Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
AGENCY	: Sri. Vasanth R, Contractor, Bangalore.
NAME OF THE WORK	: Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.
SAMPLE ID	Hot Mix Plant, Bangalore
DATE OF TESTING	12.05.2023

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Sample 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	471.5	472.5
3. Weight of Asphalt and Mineral matter Extracted, g	28.5	27.5
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g	-	-
6. Weight of Bitumen Extracted, g. (corrected)	28.5	27.5
7. Bitumen content in %	5.70	5.50
8. Average	5.60	

GRADATION AFTER EXTRACTION

SIEVE SIZE mm	Test 1 Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	Requirement as per MORTH table 500.17
19	0	0	0	100	100
13.2	12.2	12.2	2.6	97.4	90 - 100
9.5	72.5	84.7	18.0	82.0	70 - 88
4.75	94.8	179.5	38.1	61.9	53 - 71
2.36	44.9	224.4	47.6	52.4	42 - 58
1.18	39.2	263.6	55.9	44.1	34 - 48
0.600	40.5	304.1	64.5	35.5	26 - 38
0.300	47.2	351.3	74.5	25.5	18 - 28
0.150	37.8	389.1	82.5	17.5	12 - 20
0.075	48.2	437.3	92.7	7.3	4 - 10

SIEVE SIZE mm	Test 2 Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	Requirement as per MORTH table 500.17
19	0	0	0	100	100
13.2	16.3	16.3	3.4	96.6	90 - 100
9.5	61.8	78.1	16.5	83.5	70 - 88
4.75	91.1	169.2	35.8	64.2	53 - 71
2.36	46.3	215.5	45.6	54.4	42 - 58
1.18	43.1	258.6	54.7	45.3	34 - 48
0.600	52.1	310.7	65.8	34.2	26 - 38
0.300	49.8	360.5	76.3	23.7	18 - 28
0.150	35.8	396.3	83.9	16.1	12 - 20
0.075	40.2	436.5	92.4	7.6	4 - 10

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For CIVIL AIM CONSULTANTS & ENGINEERS

Authorised Signatory

No. 01, Satvika Nilaya, Opp. Widia Poorna Prajna School,
Ramaiah Layout, Nagasandra, Bangalore - 560 073.
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JobNo: CACE/BBMP/VR/W.No.06/2023-24 Date : 04.05.2023

TEST RESULTS OF AGGREGATE SHAPE TEST
(Flakiness & Elongation)

Client : **Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**

Agency : **Sri. Vasanth R, Contractor, Bangalore.**

Name of work : Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

BIS Code : IS 2386 Part (1):1963

Date of Test : 04.05.2023

Type of Mix : Dense Graded Bituminous Macadam

Sl.No.	Flakiness Index Value(%)	Elongation Index Value(%)	Total(Combined Flakiness and Elongation)(%)	Requirements
1	12.50	13.10	25.60	Maximum allowable Combined Flakiness and Elongation Indices for Dense Graded Bituminous Macadam is 35% as per Table 500.8 MORTH Specification.
2	12.80	13.50	26.30	

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date: 04.05.2023

Aggregate Gradation Test

Client	**: Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**
Agency	**: Sri. Vasanth R, Contractor, Bangalore.**
Name of the Work	: Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.
BIS Code	IS 2386(Part 1):1963(RA 2011)
Sample I / D	Hot mix Plant, Bangalore.
Type of Mix	Dense Graded Bituminous Macadam
Date of Testing	04.05.2023

Total Weight of Sample: **10000** gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Requirement as per MORTH table 500.10	Remarks
37.50	0	0.0	0	100	100	Gradation satisfies Grade II MORTH specification
26.50	710	7.1	7.10	92.90	90 - 100	
19.00	1235	12.4	19.45	80.55	71 - 95	
13.20	1370	13.7	33.15	66.85	56 - 80	
4.75	2541	25.4	58.56	41.44	38 - 54	
2.36	1305	13.1	71.61	28.39	28 - 42	
0.300	1291	12.9	84.52	15.48	7 - 21	
0.075	1170	11.7	96.22	3.78	2 - 8	

Total Weight of Sample: **10000** gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Requirement as per MORTH table 500.10	Remarks
37.5	0	0.0	0	100	100	Gradation satisfies Grade II MORTH specification
26.5	713	7.1	7.13	92.87	90 - 100	
19	1432	14.3	21.45	78.55	71 - 95	
13.2	1179	11.8	33.24	66.76	56 - 80	
4.75	2492	24.9	58.16	41.84	38 - 54	
2.360	1183	11.8	69.99	30.01	28 - 42	
0.300	1273	12.7	82.72	17.28	7 - 21	
0.075	1149	11.5	94.21	5.79	2 - 8	

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ಸಹಾಯಕ ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಧಿಕಾರಿಯವರ
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ಬಿ.ಬಿ.ಎಂ.ಪಿ ಬೆಂಗಳೂರು-26

For CIVIL AIM CONSULTANTS & ENGINEERS

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JobNo: CACE/BBMP/VR/W.No.06/2023-24 Date : 04.05.2023

TEST RESULTS OF AGGREGATE IMPACT VALUE

Client : **Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**

Agency : **Sri. Vasanth R, Contractor, Bangalore.**

Name of work : Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

Source / Location : Hot Mix Plant, Bangalore

BIS Code : IS 2386 Part (4):1963

Type of Mix : Dense Graded Bituminous Macadam

Date of test : 04.05.2023

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W1 g	385	386	
2	Weight of agregate passing 2.36 mm sieve after the test = W2 g	86	84	
3	Weight of aggregate retained 2.36 mm sieve after the test = W3 g	299	302	
5	Aggregate Impact value = percent fines 100* (W2/W1) percent	22.34	21.76	**22.05**

Comments:

→ Maximum allowable Aggregate Impact value for Dense Graded Bituminous Macadam is 27% (Table 500-8 of MORTH specification)

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Job No: CACE/BBMP/VR/W.No.06/2023-24 Date: 04.05.2023

TEST REPORT ON PAVING BITUMEN

Client	**Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**
Agency	**Sri. Vasanth R,** Contractor, Bangalore.
Name of work	Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.
BIS Code	IS 73:2013,IS 1203:1978, IS 1208:1978, IS 1205:1978, IS1448(P-69):1969
Date of Testing	04.05.2023
Type of Mix	**Dense Graded Bituminous Macadam , VG 30**
Source of Location	**Hot Mix Plant**

The results of the tests conducted on the bitumen sample using for Dense Graded Bituminous Macadam

Sl.No	Description	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 0C, 100gms, 5sec, 1/10 mm	53	Min 45
2	Softening point, 0C	51	Min 47
3	Ductility at 250C, cm	>105	Min40
4	Flash Point, 0C	265	Min 220

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date: 06.05.2023

Specific Gravity And Water Absorption Test

Client	**: Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**
Agency	**: Sri. Vasanth R, Contractor, Bangalore.**
Name of the Work	: Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.
BIS Code	IS 2386(Part 3):1963
Type of Mix	Dense Graded Bituminous Macadam
Date of Testing	04.05.2023 to 06.05.2023

Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 3	
1	Weight of aggregate suspended in water with the basket	W_1 g	2022	2023	2024	
2	Weight of basket suspended in water	W_2 g	758	759	760	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_s$ g	1264	1264	1264	
4	Weight of saturated surface dry aggregate in air	W_3 g	2018	2019	2020	
5	Weight of water equal to the volume of the aggregate	$(W_3 - W_S)$ g	748	749	750	
6	Weight of oven dried aggregate	W_4 g	2008	2009	2010	
7	Specific Gravity	$W_4/(W_3-W_S)$	2.663	2.661	2.659	2.661
8	Apparent Specific gravity	$W_4/(W_4-W_S)$	2.699	2.697	2.694	2.697
9	Water Absorption	$((W_3-W_4)*100)/W_4$	0.50%	0.50%	0.50%	0.50%

Comments:

→ Maximum allowable Aggregate Water absorption value for Dense Graded Bituminous Macadam is 2.0%(As per MORTH table 500.8)

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date: 08.05.2023

TEST REPORT ON STABILITY OF MIX

Client	:	**Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**
Agency	:	**Sri. Vasanth R,** Contractor, Bangalore.
Name of the Work	:	Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.
Type of Mix	:	Dense Graded Bituminous Macadam
Date of Testing	:	08.05.2023

The results of the tests conducted on the Dense Graded Bituminous Macadam mix sample are as follows:

Sl. No	Description	Test Result 1	Test Result 2	Requirement as per MORTH (Table 500-19)
1	Marshal Stability, Kn	10.58	9.17	9 Kn (min)
2	Marshal flow, mm	3.51	2.38	2 – 4
3	Percent air voids in Mineral Aggregate	14.12	13.49	13 – 15
4	Voids in Compacted Mix	4.39	3.82	3 – 6
5	Percent Voids filled with Bitumen	71.42	69.15	65 - 75
6	Density, g/cc	2.23	2.21	--

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date: 09.05.2023

TEST REPORT ON STABILITY OF MIX

Client	:	**Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**
Agency	:	**Sri. Vasanth R,** Contractor, Bangalore.
Name of the Work	:	Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.
Type of Mix	:	Dense Graded Bituminous Macadam
Date of Testing	:	09.05.2023

The results of the tests conducted on the Dense Graded Bituminous Macadam mix sample are as follows:

Sl. No	Description	Test Result 1	Test Result 2	Requirement as per MORTH (Table 500-19)
1	Marshal Stability, Kn	9.05	10.43	9 Kn (min)
2	Marshal flow, mm	2.32	3.01	2 – 4
3	Percent air voids in Mineral Aggregate	13.51	14.51	13 – 15
4	Voids in Compacted Mix	3.48	4.15	3 – 6
5	Percent Voids filled with Bitumen	68.35	70.53	65 - 75
6	Density, g/cc	2.21	2.24	--

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date: 08.05.2023

BITUMEN CONTENT AND GRADATION DETERMINATION OF DENSE GRADED BITUMINOUS MACADAM MIX AASHTO T 164 & AASHTO T 30

Client	**: Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**
Agency	**: Sri. Vasanth R, Contractor, Bangalore.**
Name of the Work	: Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.
Date of Testing	08.05.2023

BITUMEN CONTENT DETERMINATION

Description	Test 1	Test 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	477.5	477
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	22.50	23.00
7. Bitumen content in %	4.50	4.60
8. Average	**4.55**	

GRADATION AFTER EXTRACTION

SIEVE SIZE	Test 1				Requirement as per MORTH table 500.10
mm	Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	
37.5	0	0	0	100	100
26.5	37.1	37.1	7.8	92.2	90 - 100
19	74.2	111.3	23.3	76.7	71 - 95
13.2	66.3	177.6	37.2	62.8	56 - 80
4.75	84.9	262.5	55.0	45.0	38 - 54
2.360	75.2	337.7	70.7	29.3	28 - 42
0.300	96.4	434.1	90.9	9.1	7 - 21
0.075	22.5	456.6	95.6	4.4	2 - 8

SIEVE SIZE	Test 2				Requirement as per MORTH table 500.10
mm	Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	
37.5	0	0	0	100	100
26.5	40.8	40.8	8.6	91.4	90 - 100
19	76.8	117.6	24.7	75.3	71 - 95
13.2	68.3	185.9	39.0	61.0	56 - 80
4.75	85.90	271.8	57.0	43.0	38 - 54
2.360	64.2	336	70.4	29.6	28 - 42
0.300	76.3	412.3	86.4	13.6	7 - 21
0.075	32.5	444.8	93.2	6.8	2 - 8

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date: 09.05.2023

BITUMEN CONTENT AND GRADATION DETERMINATION OF DENSE GRADED BITUMINOUS MACADAM MIX
AASHTO T 164 & AASHTO T 30

Client	: Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
Agency	: Sri. Vasanth R, Contractor, Bangalore.
Name of the Work	: Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.
Date of Testing	09.05.2023

BITUMEN CONTENT DETERMINATION

Description	Test 1	Test 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	477	477
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	23.00	23.00
7. Bitumen content in %	4.60	4.60
8. Average	4.60	

GRADATION AFTER EXTRACTION

SIEVE SIZE	Test 1				Requirement as per MORTH table 500.10
mm	Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	
37.5	0	0	0	100	100
26.5	36.2	36.2	7.6	92.4	90 - 100
19	73.5	109.7	23.0	77.0	71 - 95
13.2	65.2	174.9	36.7	63.3	56 - 80
4.75	83.1	258	54.1	45.9	38 - 54
2.360	74.5	332.5	69.7	30.3	28 - 42
0.300	95.9	428.4	89.8	10.2	7 - 21
0.075	23	451.4	94.6	5.4	2 - 8

SIEVE SIZE	Test 2				Requirement as per MORTH table 500.10
mm	Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	
37.5	0	0	0	100	100
26.5	38.6	38.6	8.1	91.9	90 - 100
19	75.7	114.3	24.0	76.0	71 - 95
13.2	67.3	181.6	38.1	61.9	56 - 80
4.75	84.90	266.5	55.9	44.1	38 - 54
2.360	63.8	330.3	69.2	30.8	28 - 42
0.300	75.8	406.1	85.1	14.9	7 - 21
0.075	40.5	446.6	93.6	6.4	2 - 8

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date: 08.05.2023

Aggregate Impact Value

Client	**: Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**
Agency	**: Sri. Vasanth R, Contractor, Bangalore.**
Name of the Work	: Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.
BIS Code	IS 2386(Part 4):1963
Source / Location	Hot Mix Plant, Bangalore
Type of Mix	Bituminous Concrete
Date of Testing	08.05.2023

Sl No.	Details	Test No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	385	387	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	84.5	85	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	300.5	302	
4	Aggregate Impact value = percent fines 100* (W_2/W_1) percent	21.95	21.96	**21.96**

Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Concrete is 24%(MORTH table no.500.16)

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date :02.05.2023

ATTERBERG LIMITS TEST FOR WMM

Client : **Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**

Agency : **Sri. Vasanth R, Contractor, Bangalore.**

Name of Work : Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

IS Code: : IS 2720(Part 5):1985

Date of Testing : 30.04.2023 to 02.05.2023

Material Type : Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	19.50	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

Note:

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For CIVIL AIM CONSULTANTS & ENGINEERS

Authorised Signatory

No. 01, Satvika Nilaya, Opp. Widia Poorna Prajna School,
Ramaiah Layout, Nagasandra, Bangalore - 560 073.
Ph: 9591618639, GSTIN: 29CNWPD9510K1ZB, Email: civilaimconsultants@gmail.com

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date :02.05.2023

ATTERBERG LIMITS TEST FOR WMM

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IS Code: : IS 2720(Part 5):1985

Date of Testing : 30.04.2023 to 02.05.2023

Material Type : Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	20.00	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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Agency : **Sri. Vasanth R, Contractor, Bangalore.**

Name of Work : Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

IS Code: : IS 2720(Part 5):1985

Date of Testing : 30.04.2023 to 02.05.2023

Material Type : Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	19.00	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date :02.05.2023

ATTERBERG LIMITS TEST FOR WMM

Client : **Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**

Agency : **Sri. Vasanth R, Contractor, Bangalore.**

Name of Work : Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

IS Code: : IS 2720(Part 5):1985

Date of Testing : 30.04.2023 to 02.05.2023

Material Type : Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	21.00	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date : 02.05.2023

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**
Agency	**Sri. Vasanth R, Contractor, Bangalore.**
Name of Work	Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.
BIS code:	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	02.05.2023

Sl no	Test	1	2	Requirements as per MORTH 5th edition table no 400.12
1	Flakiness Index %	11.20	11.50	Combined Flakiness & Elongation index Max 35%
2	Elongation Index %	12.70	13.10	
	Combined Flakiness & Elongation index	23.90	24.60	

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date : 02.05.2023

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**
Agency	**Sri. Vasanth R, Contractor, Bangalore.**
Name of Work	Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.
BIS code:	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	02.05.2023

Sl no	Test	1	2	Requirements as per MORTH 5th edition table no 400.12
1	Flakiness Index %	12.10	12.00	Combined Flakiness & Elongation index Max 35%
2	Elongation Index %	13.50	13.30	
	Combined Flakiness & Elongation index	25.60	25.30	

Note:

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date: 02.05.2023

Aggregate Impact Value

Client	**Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**
Agency	**Sri. Vasanth R, Contractor, Bangalore.**
Name of the Work	Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.
IS Code	IS 2386 (Part 4):1963(RA 2011)
Type of Mix	Wet Mix macadam
Date of Testing	02.05.2023

Sl No.	Details	Test No. 1	Test No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	385	381	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	88.5	87	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	296.5	294	
4	Aggregate Impact value = percent fines 100* (W_2/W_1)%	22.99	22.83	**22.91**

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%(As per MORTH Specication table 400.12)

Note:

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Aggregate Impact Value

Client	**Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**
Agency	**Sri. Vasanth R, Contractor, Bangalore.**
Name of the Work	Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.
IS Code	IS 2386 (Part 4):1963(RA 2011)
Type of Mix	Wet Mix macadam
Date of Testing	02.05.2023

Sl No.	Details	Test No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	379	381	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	85.5	86.5	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	293.5	294.5	
4	Aggregate Impact value = percent fines 100* (W_2/W_1)%	22.56	22.70	**22.63**

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%(As per MORTH Specication table 400.12)

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GRADATION FOR WMM

Client : **Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**

Agency : **Sri. Vasanth R, Contractor, Bangalore.**

Name of Work : Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

IS Code: : IS 2386 (Part 1):1963(RA 2011)

Date of Testing : 02.05.2023

Material Type : Wet Mix Macadam

Oven Dry.Wt, grar 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirement as per MORTH 5th edition table no 400.13
53	0	0	0	100	100
45	172	172	1.7	98.3	95-100
22.4	2548	2720	27.2	72.8	60-80
11.2	2190	4910	49.1	50.9	40-60
4.75	1845	6755	67.6	32.5	25-40
2.36	1175	7930	79.3	20.7	15-30
0.600	585	8515	85.2	14.9	8-22
0.075	1254	9769	97.7	2.3	0-5

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IS Code: : IS 2386 (Part 1):1963(RA 2011)

Date of Testing : 02.05.2023

Material Type : Wet Mix Macadam

Oven Dry.Wt, grar 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirement as per MORTH 5th edition table no 400.13
53	0	0	0	100	100
45	199	199	2.0	98.0	95-100
22.4	2541	2740	27.4	72.6	60-80
11.2	2172	4912	49.1	50.9	40-60
4.75	1843	6755	67.6	32.5	25-40
2.36	1182	7937	79.4	20.6	15-30
0.600	630	8567	85.7	14.3	8-22
0.075	1241	9808	98.1	1.9	0-5

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IS Code: : IS 2386 (Part 1):1963(RA 2011)

Date of Testing : 02.05.2023

Material Type : Wet Mix Macadam

Oven Dry.Wt, grar 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirement as per MORTH 5th edition table no 400.13
53	0	0	0	100	100
45	177	177	1.8	98.2	95-100
22.4	2525	2702	27.0	73.0	60-80
11.2	2142	4844	48.4	51.6	40-60
4.75	1849	6693	66.9	33.1	25-40
2.36	1175	7868	78.7	21.3	15-30
0.600	585	8453	84.5	15.5	8-22
0.075	1220	9673	96.7	3.3	0-5

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IS Code: : IS 2386 (Part 1):1963(RA 2011)

Date of Testing : 02.05.2023

Material Type : Wet Mix Macadam

Oven Dry.Wt, grar 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirement as per MORTH 5th edition table no 400.13
53	0	0	0	100	100
45	204	204	2.0	98.0	95-100
22.4	2533	2737	27.4	72.6	60-80
11.2	2163	4900	49.0	51.0	40-60
4.75	1842	6742	67.4	32.6	25-40
2.36	1182	7924	79.2	20.8	15-30
0.600	625	8549	85.5	14.5	8-22
0.075	1230	9779	97.8	2.2	0-5

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Job No.: CACE/BBMP/VR/W.No.06/2023-24

Date: 23.05.2023

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**

Agency : **Sri. Vasanth R, Contractor, Bangalore.**

Name of the work : Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{20}

Compressive Strength as on : 28th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	25.04.2023	23.05.2023	8.178	505.7	22.48
2	25.04.2023	23.05.2023	8.183	506.8	22.52
3	25.04.2023	23.05.2023	8.192	511.3	22.72

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ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ ಬೆಂಗಳೂರು-೨೬

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date: 02.05.2023

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**

Agency : **Sri. Vasanth R, Contractor, Bangalore.**

Name of the work : Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{20}

Compressive Strength as on : 7th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	25.04.2023	02.05.2023	8.128	340.8	15.15
2	25.04.2023	02.05.2023	8.139	341.9	15.20
3	25.04.2023	02.05.2023	8.142	342.1	15.20

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TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**

Agency : **Sri. Vasanth R, Contractor, Bangalore.**

Name of the work : Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{20}

Compressive Strength as on : 28th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	25.04.2023	23.05.2023	8.175	502.2	22.32
2	25.04.2023	23.05.2023	8.179	504.7	22.43
3	25.04.2023	23.05.2023	8.182	509.3	22.64

Note:

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For CIVIL AIM CONSULTANTS & ENGINEERS

Authorised Signatory

No. 01, Satvika Nilaya, Opp. Widia Poorna Prajna School,
Ramaiah Layout, Nagasandra, Bangalore - 560 073.
Ph: 9591618639, GSTIN: 29CNWPD9510K1ZB, Email: civilaimconsultants@gmail.com

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Job No.: CACE/BBMP/VR/W.No.06/2023-24

Date: 02.05.2023

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client	**: Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**
Agency	**: Sri. Vasanth R, Contractor, Bangalore.**
Name of the work	: Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.
Sample ID	: Cement Concrete
Size of cubes	: 150mmx150mmx150mm
Cross Sectional Area	: 22500 mm^2
Technical Reference	: IS: 516-1959 (Reaffirmed 2008)
Grade of Concrete	: M_{20}
Compressive Strength as on	: 7th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	25.04.2023	02.05.2023	8.168	336.3	14.95
2	25.04.2023	02.05.2023	8.184	345.5	15.36
3	25.04.2023	02.05.2023	8.146	352.8	15.68

Note:

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date: 23.05.2023

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**

Agency : **Sri. Vasanth R, Contractor, Bangalore.**

Name of the work : Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{20}

Compressive Strength as on : 28th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	25.04.2023	23.05.2023	8.184	505.2	22.45
2	25.04.2023	23.05.2023	8.165	513.6	22.83
3	25.04.2023	23.05.2023	8.146	484.2	21.52

Note:

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date: 04.05.2023

PRECAST SLAB 100 mm Thick(CORE) TEST REPORT

Client	:	**: Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**
Contractor	:	**: Sri. Vasanth R, Contractor, Bangalore.**
Name of Work	:	: Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.
No.of Sample Tested	:	03
Date of Testing	:	04.05.2023
Techinical Reference	:	IS:516-1959 (Reaffirmed 1999), SP-24:1983.
Grade of Concrete	:	M_{20}

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	81.00	0.375	2357.85	1.62	0.959	32.40	16.50	17.82	17.09	21.36
2	50.00	83.00	0.389	2386.94	1.66	0.963	33.90	17.27	18.65	17.96	22.45
3	50.00	85.00	0.399	2390.69	1.70	0.968	34.20	17.42	18.81	18.20	22.75

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Job No.: CACE/BBMP/VR/W.No.06/2023-24

Date: 04.05.2023

PRECAST SLAB 230mm Thick(CORE) TEST REPORT

Client	:	: Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
Contractor	:	: Sri. Vasanth R, Contractor, Bangalore.
Name of Work	:	: Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.
No.of Sample Tested	:	03
Date of Testing	:	04.05.2023
Techinical Reference	:	IS:516-1959 (Reaffirmed 1999), SP-24:1983.
Grade of Concrete	:	M20

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	90.00	108.00	1.750	2547.06	1.20	0.914	113.20	17.79	19.22	17.56	21.95
2	90.00	109.00	1.755	2530.90	1.21	0.915	113.60	17.86	19.29	17.64	22.05
3	90.00	110.00	1.761	2516.47	1.22	0.916	113.70	17.87	19.30	17.68	22.10

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date: 18.05.2023

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**

Agency : **Sri. Vasanth R, Contractor, Bangalore.**

Name of the work : Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{20}

Compressive Strength as on : 28th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	20.04.2023	18.05.2023	8.170	500.2	22.23
2	20.04.2023	18.05.2023	8.175	506.3	22.50
3	20.04.2023	18.05.2023	8.182	511.2	22.72

Note:

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Job No.: CACE/BBMP/VR/W.No.06/2023-24

Date: 27.04.2023

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client	**: Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**
Agency	**: Sri. Vasanth R, Contractor, Bangalore.**
Name of the work	: Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.
Sample ID	: Cement Concrete
Size of cubes	: 150mmx150mmx150mm
Cross Sectional Area	: 22500 mm^2
Technical Reference	: IS: 516-1959 (Reaffirmed 2008)
Grade of Concrete	: M_{20}
Compressive Strength as on	: 7th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	20.04.2023	27.04.2023	8.115	342.8	15.24
2	20.04.2023	27.04.2023	8.123	348.3	15.48
3	20.04.2023	27.04.2023	8.134	351.7	15.63

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ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-26

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date: 18.05.2023

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**

Agency : **Sri. Vasanth R, Contractor, Bangalore.**

Name of the work : Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{20}

Compressive Strength as on : 28th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	20.04.2023	18.05.2023	8.149	502.2	22.32
2	20.04.2023	18.05.2023	8.157	505.8	22.48
3	20.04.2023	18.05.2023	8.160	512.1	22.76

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Job No.: CACE/BBMP/VR/W.No.06/2023-24

Date: 02.05.2023

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client	**: Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**
Agency	**: Sri. Vasanth R, Contractor, Bangalore.**
Name of the work	: Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.
Sample ID	: Cement Concrete
Size of cubes	: 150mmx150mmx150mm
Cross Sectional Area	: 22500 mm^2
Technical Reference	: IS: 516-1959 (Reaffirmed 2008)
Grade of Concrete	: M_{20}
Compressive Strength as on	: 7th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	25.04.2023	02.05.2023	8.120	339.5	15.09
2	25.04.2023	02.05.2023	8.127	342.7	15.23
3	25.04.2023	02.05.2023	8.135	350.1	15.56

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date: 17.05.2023

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**

Agency : **Sri. Vasanth R, Contractor, Bangalore.**

Name of the work : Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{30}

Compressive Strength as on : 28th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	19.04.2023	17.05.2023	8.169	705.2	31.34
2	19.04.2023	17.05.2023	8.184	716.3	31.84
3	19.04.2023	17.05.2023	8.172	724.5	32.20

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date: 26.04.2023

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**

Agency : **Sri. Vasanth R, Contractor, Bangalore.**

Name of the work : Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{30}

Compressive Strength as on : 7th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	19.04.2023	26.04.2023	8.184	508.2	22.59
2	19.04.2023	26.04.2023	8.169	516.3	22.95
3	19.04.2023	26.04.2023	8.152	484.5	21.53

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ಸಹಾಯಕ ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಭಿಯಂತರರ
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿಬಿಎಂಪಿ, ಬೆಂಗಳೂರು-26

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date: 17.05.2023

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**

Agency : **Sri. Vasanth R, Contractor, Bangalore.**

Name of the work : Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{30}

Compressive Strength as on : 28th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	19.04.2023	17.05.2023	8.188	715.2	31.79
2	19.04.2023	17.05.2023	8.169	724.3	32.19
3	19.04.2023	17.05.2023	8.146	732.6	32.56

Note:

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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date: 26.04.2023

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**

Agency : **Sri. Vasanth R, Contractor, Bangalore.**

Name of the work : Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{30}

Compressive Strength as on : 7th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	19.04.2023	26.04.2023	8.168	500.9	22.26
2	19.04.2023	26.04.2023	8.154	513.3	22.81
3	19.04.2023	26.04.2023	9.146	489.6	21.76

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ಸಹಾಯಕ ಅಧಿಯಂತರರು
ಬಿಬಿಎಂಪಿ ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಧಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ ಬೆಂಗಳೂರು-26

Authorised Signatory

No. 01, Satvika Nilaya, Opp. Widia Poorna Prajna School,
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CIVIL AIM CONSULTANTS & ENGINEERS

(Building Geo-Tech & Highway Materials Testing Laboratory)

An ISO 9001-2015 Certified Company

NABL Accredited As Per ISO/IEC 17025:2017 Laboratory

Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date: 17.05.2023

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**

Agency : **Sri. Vasanth R, Contractor, Bangalore.**

Name of the work : Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{30}

Compressive Strength as on : 28th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	19.04.2023	17.05.2023	8.180	716.2	31.83
2	19.04.2023	17.05.2023	8.165	724.5	32.20
3	19.04.2023	17.05.2023	8.146	732.6	32.56

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples collected at the site.
3. Any Query regarding the report must be reported within 30 days from the date of testing.

For CIVIL AIM CONSULTANTS & ENGINEERS

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ಬಿಬಿಎಂಪಿ ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
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Job No.: CACE/BBMP/VR/W.No.06/2023-24 Date: 27.04.2023

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.**

Agency : **Sri. Vasanth R, Contractor, Bangalore.**

Name of the work : Improvements to roads and drain at Agrahara and Agrahara layout, Kattigenahalli in Ward No.06, Kogilu BBMP, Bangalore.

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{20}

Compressive Strength as on : 7th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	20.04.2023	27.04.2023	8.119	338.5	15.04
2	20.04.2023	27.04.2023	8.120	339.1	15.07
3	20.04.2023	27.04.2023	8.125	342.3	15.21

Note:

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